

**Listing of the Claims**

1. (Previously Presented) A magnetic localization device, comprising:
  - a) a field generator for generating a magnetic field;
  - b) a field sensor for measuring the magnetic field;
  - c) a reference sensor for measuring the magnetic field at a known reference position;
  - d) a control unit, which is arranged for determining the position of the field sensor relative to the field generator and thereby for compensating external field distortions by taking the reference sensor into consideration.
2. (Previously Presented) A localization device as claimed in claim 1, wherein the spatial position of the field generator is known.
3. (Previously Presented) A localization device as claimed in claim 1, wherein the field generator and/or the reference sensor are fastened to the gantry of a computer tomograph.
4. (Previously Presented) A localization device as claimed in claim 1, wherein the control unit contains a memory with a calibration function, which provides a correction shift for the uncorrected determined position of the field sensor based on measured signals of the reference sensor and the field sensor.
5. (Cancelled)
6. (Previously Presented) A method for position measurement with a magnetic localization device, comprising the steps of:
  - a) collecting the signals of a field sensor and/or a field generator;
  - b) collecting the signals of a magnetic reference sensor, which is placed at a known spatial position relative to the field generator or to the field sensor;

c) determining the position of the field sensor relative to the field generator, where external field distortions are compensated by taking the signals of the reference sensor into consideration.

7. (Previously Presented) A method as claimed in claim 6, wherein a correction function is determined, which indicates a correction shift for the uncorrected determined position of the field sensor in dependence on the signal of the reference sensor and the uncorrected determined position of the field sensor.

8. (Previously Presented) A method as claimed in claim 7, wherein the correction function for support points in a volume of interest is empirically determined and extended by extrapolation or interpolation respectively on the whole volume.

9. (Previously Presented) A method as claimed in claim 6, wherein a parameter is determined from the signal of the reference sensor, which parameter characterizes the external field distortion.

10. (Previously Presented) A method as claimed in claim 9, wherein the parameter describes the angle of rotation of a computer tomograph situated in the vicinity of the localization device.